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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/773,423

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Tomoyuki Furuya

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EXAMINER

RILEY, MARCUS T

ART UNIT

PAPER NUMBER

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MAIL DATE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/773,423	Applicant(s) FURUYA, TOMOYUKI	
	Examiner MARCUS T. RILEY	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/04/2007; 08/06/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 1, 2009 has been entered.

Response to Amendment

2. This office action is responsive to applicant's remarks received on May 1, 2009. Claims 1-14 remain pending.

Response to Arguments

3. Applicant's arguments with respect to amended claims 1, 7 & 12 filed on May 1, 2009 has have been fully considered but they are not persuasive.

A: Applicant's Remarks

For Applicant's remarks, see "*Applicant Arguments/Remarks Made in an Amendment*" filed May 1, 2009.

A: Examiner's Response

Applicant argues that the applied references do not teach However, Ohnishi is not seen to disclose or suggest (i) developing rendering instructions of each scan line into multivalued

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bitmap data and subjecting the multivalued bitmap data to color processing and n-value conversion processing, (ii) subjecting the rendering instructions to color processing and n-value conversion processing color by color of the rendering instructions, storing the results in the form of an n-valued pattern, and rendering the n-valued pattern of each scan line into n-valued bitmap data, and (iii) determining whether the rendering instructions include a rendering instruction other than overwrite for each scan line.

Examiner understands Applicant's argument but respectfully disagrees. Ohnishi either alone or in combination with Shimzu discloses, teaches or suggests Applicant's claimed invention. Ohnishi discloses developing rendering instructions of each scan line into multivalued bitmap data and subjecting the multivalued bitmap data to color processing and n-value conversion processing. Ohnishi at Figure 26, Step S26-11 shows where the rendering means develop rendering instructions of each line into multi-valued bitmap data and column 4, lines 6-21, Step S26-21 shows where it is subjects the multi-valued bitmap data to color processing and n-value conversion processing. Ohnishi at Step S26-21 shows subjecting the rendering instructions to color processing and n-value conversion processing color by color of the rendering instruction and Figure 22 Step, 21-16 shows where one line scanning is finished and stored. The CPU 12 of Shimizu determines whether the rendering instructions include a rendering instruction other than overwrite for each scan line. Shimizu at Fig. 6 shows the different rendering instructions other than overwrite for each scan line. Thus, Ohnishi either alone or in combination with Shimzu discloses, teaches or suggests Applicant's claimed invention.

As a result, claim 1 is not allowable over the applied references. In addition, independent Claims 7 and 12 are method and printer driver claims, respectively, which generally correspond

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to apparatus Claim 1. Accordingly, Claims 7 and 12 not allowable. The other claims in the application are each dependent from the independent claims and are also not allowable.

As a result, Applicant's application is not in condition for allowance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-3, 6-9 & 12-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnishi '465 (US 7,853,465 B1 hereinafter, Ohnishi '465) in combination with Shimzu (US 6,490,055 hereinafter, Shimzu '055).

Regarding claim 1; Ohnishi '465 discloses a printing control apparatus for outputting print data and executing printing, comprising: (See Figures 1 & 2 where they each show a printer that outputs and prints data. See column 2, lines 14-19):

storage means (See Figures 1 and 2 where they each show a main storage unit) to which rendering instructions are input, for storing the rendering instructions page by page (FIG. 2 is a conceptual diagram showing a process during which data is stored in the storage device of a medium reading unit. See column 2, lines 14-19);

a first rendering means (Figure 26, Step S26-10) for developing rendering instructions of each line into multi-valued bitmap data (See Figure 26, Step S26-11 "Develop to Multi-Value Bit Map According to

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Drawing Command”) and subjecting the multi-valued bitmap data to color processing and n-value conversion processing (Step S26-21; “*Color Correction/Color Change/Two(N) Valued*” column 4, lines 6-21);

a second rendering means (Figure 21, Step S21-0) for subjecting the rendering instructions to color processing and n-value conversion processing color by color of the rendering instructions (Figure 22, Step S21-17 “*When the processing for one line has been completed (21-16), the **optimal color correction, color conversion and binarization (n-valued) processes are performed for the object in each buffer (21-17).***” column 6, lines 27-31);

storing the results in the form of an n-valued pattern, and rendering the n-valued pattern of each scan line into n-valued bitmap data (See Figure 22; One line scanning is finished and stored.” column 8, lines 48-59);

Ohnishi ‘465 does not expressly disclose determining means for reading out rendering instructions that have been stored in said storage means and determining whether the rendering instructions include a rendering instruction other than overwrite; control means for extracting edges of objects in the rendering instructions in each scan line and exercising control so as to cause said first rendering means to form the multivalued bitmap data between the edges if said determining means determines that the rendering instructions include a rendering instruction other than the overwrite, and to cause said second rendering means to form the n-valued bitmap data if said determining means determines that the rendering instructions do not include a rendering instruction other than overwrite; wherein said control means causes said first rendering means or said second rendering means to develop all the rendering instructions for one scan line into bitmap data before rendering the next scan line.

Shimizu ‘055 discloses determining means (See Fig. 1, CPU #12) for reading out rendering instructions that have been stored in said storage means and determining whether the rendering

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instructions include a rendering instruction other than overwrite for each scan line (See Figure 1 whereas “*A program ROM 6 is a **memory for storing processing procedures (software)** according to the invention as shown in FIG. 2, a CPU 12 performing the reading of color PDL data in accordance with the software...*” column 4, lines 38-42. Fig. 6 shows the different rendering instructions other than overwrite for each scan line.

control means (Figure 1; #14 printer controller) for extracting edges of objects in the rendering instructions in each scan line and exercising control so as to cause said first rendering means to form the multivalued bitmap data between the edges if said determining means determines that the rendering instructions include a rendering instruction other than the overwrite for a scan line (At step 901, the CPU 12 extracts scan line information. See column 8, lines 10-16, and column 16, lines 5-8);

and to cause said second rendering means to form the n-valued bitmap data if said determining means determines that the rendering instructions do not include a rendering instruction other than overwrite for the scan line (Figure 22, Step S21-17 “*When the processing for one line has been completed (21-16), the **optimal color correction, color conversion and binarization (n-valued) processes are performed for the object in each buffer (21-17).***” column 6, lines 27-31);

wherein said control means causes said first rendering means or said second rendering means to develop the rendering instructions into bitmap data line by line (See Figure 8 where “*FIG. 8 is a flowchart showing the overview of band rendering process “...the mask information 151 to be supported is composed of run length (**one scan line in the X direction**), convex polygon with no edge crossed, **bit map image, and bit map font.***” column 6, lines 21-24).

Ohnishi ‘465 and Shimzu ‘055 are combinable because they are from same field of endeavor of a printing apparatus (“*The present invention relates to a color printing apparatus...*” Shimzu ‘055 at column 1, lines 10).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the printing apparatus as taught by Ohnishi ‘465 by adding determining means and control means as taught by Shimzu ‘055. The motivation for doing so would have been

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because it advantageous to provide a color printing apparatus which can realize a color logical drawing at a lower cost and with a certain precision. Therefore, it would have been obvious to combine Ohnishi '465 with Shimzu '055 to obtain the invention as specified in claim 1.

Regarding claim 2; Ohnishi '465 discloses where said first rendering means includes: means for generating multi-valued bitmap data based upon the rendering instructions (See Figure 3 where Fig. 3 shows that the obtained color data are then used to perform the development process, and a multi-value bit map image is generated." column 4, lines 6-11);

first color correcting means (See Figure 3 where Fig. 3 "Color Correction") for performing a color correction of the multi-valued bitmap data (*"...color correction is performed for multi-value color data that are included in the drawing command."* column 4, lines 6-9);

first color converting means (See Figure 3 "Color Conversion") for converting colors of the multi-valued bitmap data that has been subjected to the color correction by said first color correcting means to multi-valued bitmap data of another color space (*Then while referring to the pattern plane, color conversion, which is consonant with the attribute of an object, is performed for the obtained multi-value bit map, and the resultant bit map is binarized (n-valued) to obtain a device bit map.*" column 4, lines 15-19);

and n-value converting means(See Figure 3 "Two (N) Valued)" for subjecting the multi-valued bitmap data that has been subjected to the color conversion by said first color converting means to an n-value conversion (*"... color correction is performed for multi-value color data that are included in the drawing command. The obtained color data are then used to perform the development process, and a multi-value bit map image is generated. At the same time as the color data are being developed to generate the bit map... Then while referring to the pattern plane, color conversion, which is consonant with the attribute of an object, is performed for the obtained multi-value bit map, and the resultant bit map is binarized (n-valued) to obtain a device bit map."* column 4, lines 6-21);

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Regarding claim 3; Ohnishi '465 discloses where said second rendering means includes: second color correcting means for correcting colors of an image included in the rendering instructions (See Figure 26 where "**Step S26-21 shows** wherein the color process, such as color correction, color conversion or binarization (**n-valued process**), is performed in consonance with the attribute of the object." column 8, lines 53-56).

second color converting means for converting colors of the image that has been subjected to the color correction by said second color correcting means to colors of another color space image n-value converting means for subjecting the image data of the image that has been subjected to the color conversion by said second color converting means to an n-value conversion and creating an n-valued pattern (See Figure 26 where "**Step S26-21 shows** wherein the color process, such as color correction, color conversion or binarization (**n-valued process**), is performed in consonance with the attribute of the object." column 8, lines 53-56). See also (Figure 21 Step S21-17 "*When the processing for one line has been completed (21-16), the **optimal color correction, color conversion and binarization (n-valued) processes are performed for the object in each buffer (21-17).***" column 6, lines 27-31);

and means for creating n-valued bitmap data based upon the n-valued pattern obtained by the n-value conversion performed by said image n-value converting means (See Figure 26 where "**Step S26-21 shows** wherein the color process, such as color correction, color conversion or binarization (**n-valued process**), is performed in consonance with the attribute of the object." column 8, lines 53-56). See also (Figure 21 Step S21-17 "*When the processing for one line has been completed (21-16), the **optimal color correction, color conversion and binarization (n-valued) processes are performed for the object in each buffer (21-17).***" column 6, lines 27-31);

Regarding claim 6; Ohnishi '465 discloses where the value of n is 2 ("*In the optimal color process for each object, for example, a **coefficient for color conversion**, and the **size of a dither matrix** for binarization and a **threshold value** are consonant with the attribute of an object. The **size of an n-valued dither matrix, a threshold value and the number of sheets may be consonant** with the attribute of an object.*" column 7, lines 27-32).

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Regarding claim 7; Independent claims 7 & 12 contains substantially similar features as that of apparatus claim 1. Thus, claim 7 & 12 are rejected on the same grounds as claim 1.

Regarding claim 8; Claims 8 & 13 contains substantially the same subject matter as claim 2. Therefore, claims 8 & 13 are rejected on the same grounds as claim 2.

Regarding claim 9; Claims 9 & 14 contains substantially the same subject matter as claim 3. Therefore, claims 9 & 14 are rejected on the same grounds as claim 3.

6. **Claims 4, 5, 10 & 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohnishi '465 in combination with Shimzu '055.

Regarding claim 4; Ohnishi '465 as modified does not expressly disclose where said storage means sorts and stores entered rendering instructions, and said first and second rendering means read out and process the rendering instructions in the order in which they have been sorted and stored in said storage means.

Shimzu '055 discloses where said storage means sorts and stores entered rendering instructions, and said first and second rendering means read out and process the rendering instructions in the order in which they have been sorted and stored in said storage means ("*Each mask object finally created is made by subdividing a page memory for the rendering with smaller memory capacity than the full page memory, i.e., banding, into multiple bands (desirably a power of 2 in height, and optimally about 512 dots), sorting each mask object for each band, and making up a link list as shown in FIG. 5D within each band.*" column 6, lines 38-44).

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Ohnishi '465 and Shimzu '055 are combinable because they are from same field of endeavor of a printing apparatus (*"The present invention relates to a color printing apparatus..."* Shimzu '055 at column 1, lines 10).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the printing apparatus as taught by Ohnishi '465 by adding where said storage means sorts and stores entered rendering instructions, and said first and second rendering means read out and process the rendering instructions in the order in which they have been sorted and stored in said storage means as taught by Shimzu '055. The motivation for doing so would have been because it advantageous to provide a color printing apparatus at a lower cost and with a certain precision (*"...it is an object of the present invention to provide a color printing apparatus which can realize a color logical drawing at lower cost and with a certain precision."* Shimzu '055 at column 2, lines 28-31). Therefore, it would have been obvious to combine Ohnishi '465 with Shimzu '055 to obtain the invention as specified in claim 1.

Regarding claim 5; Shimzu '055 discloses where the sorting order is in a direction from the top to the bottom of a page (*"Each mask object finally created is made by subdividing a page memory for the rendering with smaller memory capacity than the full page memory, i.e., banding, into multiple bands (desirably a power of 2 in height, and optimally about 512 dots), sorting each mask object for each band, and making up a link list as shown in FIG. 5D within each band."* column 6, lines 38-44).

Regarding claim 10; Claim 10 contains substantially the same subject matter as claim 4. Therefore, claim 10 is rejected on the same grounds as claim 4.

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Regarding claim 11; Claim 11 contains substantially the same subject matter as claim 5.

Therefore, claim 11 is rejected on the same grounds as claim 5.

Examiner Notes

7. The Examiner cites particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested that, in preparing responses, the applicant fully considers the references in its entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or as disclosed by the Examiner.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARCUS T. RILEY whose telephone number is (571)270-1581. The examiner can normally be reached on Monday - Friday, 7:30-5:00, est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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